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Non Invasive Imaging

SURGICAL THERAPY FOR ATRIAL FIBRILLATION: IMPACT OF LEFT ATRIAL APPENDAGE EXCLUSION OR AMPUTATION ON ATRIAL MECHANICAL FUNCTION

Poster Contributions
Hall C
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Background: The left atrial appendage (LAA) is known to contribute to left atrial mechanical function (LAMF). Many patients, despite LAA exclusion, have a residual connection between the left atrium and LAA. We sought to determine the impact of LAA exclusion or amputation on LAMF.

Methods: Echocardiograms were retrospectively reviewed for adult patients without congenital heart disease that underwent a left atrial surgical AF therapy between 2004 and 2010. Eligible patients had an echocardiogram in sinus rhythm or atrial paced rhythm preceding and > three months following surgery. Clinical, surgical, and echocardiographic variables were compared. LAMF was defined as: present (presence of A wave on mitral inflow and A' on medial mitral annular tissue Doppler imaging), partial (either A or A' present), or absent (neither A or A' present).

Results: Surgical therapy for AF was performed in 126 patients (mean age 65.1 ± 11.4 years, 53 women) along with mitral valve surgery (57.1%), other valve surgery (43.7%), and coronary artery bypass grafting (25.4%). Techniques included: C&S alone (8.7%), RF (42.9%), cryo (27.8%) and mixed (20.6%). The LAA was left intact (n=16, 12.7%), excluded (n=67, 53.2%), or amputated (n=43, 34.1%). Patients with an amputated LAA had a greater decrease in A wave (-0.24 ±0.47 m/s) compared with patients with either LAA exclusion (-0.13 ± 0.36 m/s, p=0.005) or left intact (-0.04 ± 0.36 m/s, p=0.04). LAA amputation was associated with more patients with a decrease in LAMF to partial or absent (n=14/43, 32.6%) than LAA exclusion (n=6/67, 9.0%, p=0.001). Multivariate regression indicated the decrease in LAMF to partial or absent with LAA amputation was independent of ablation energy source, lesion set, and valve surgery (p=0.025). AF recurred in 16.7% of patients at median 37 months follow-up. Ischemic stroke occurred in 4 patients, which were all treated with LAA exclusion and had LAMF present.

Conclusions: LAA amputation is associated with a greater decrease in LAMF when compared with LAA exclusion or when the LAA is left intact. Such differences may be important and should be accounted for in prospective studies evaluating the role of LAA closure and amputation techniques.